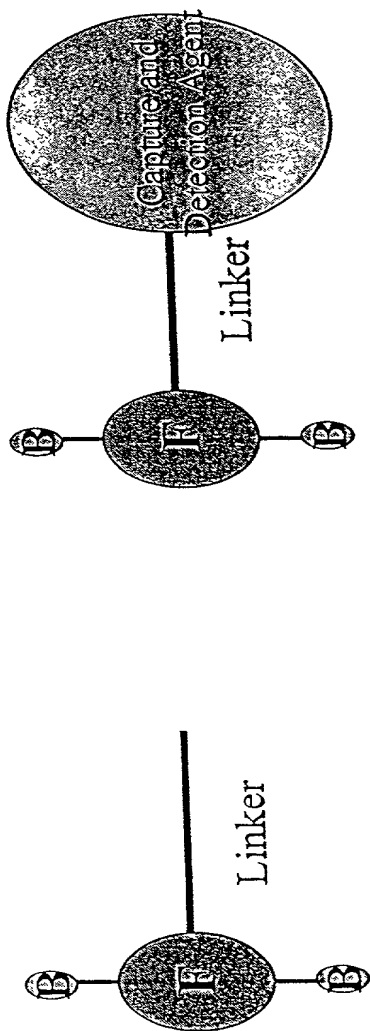


High-throughput Target ID

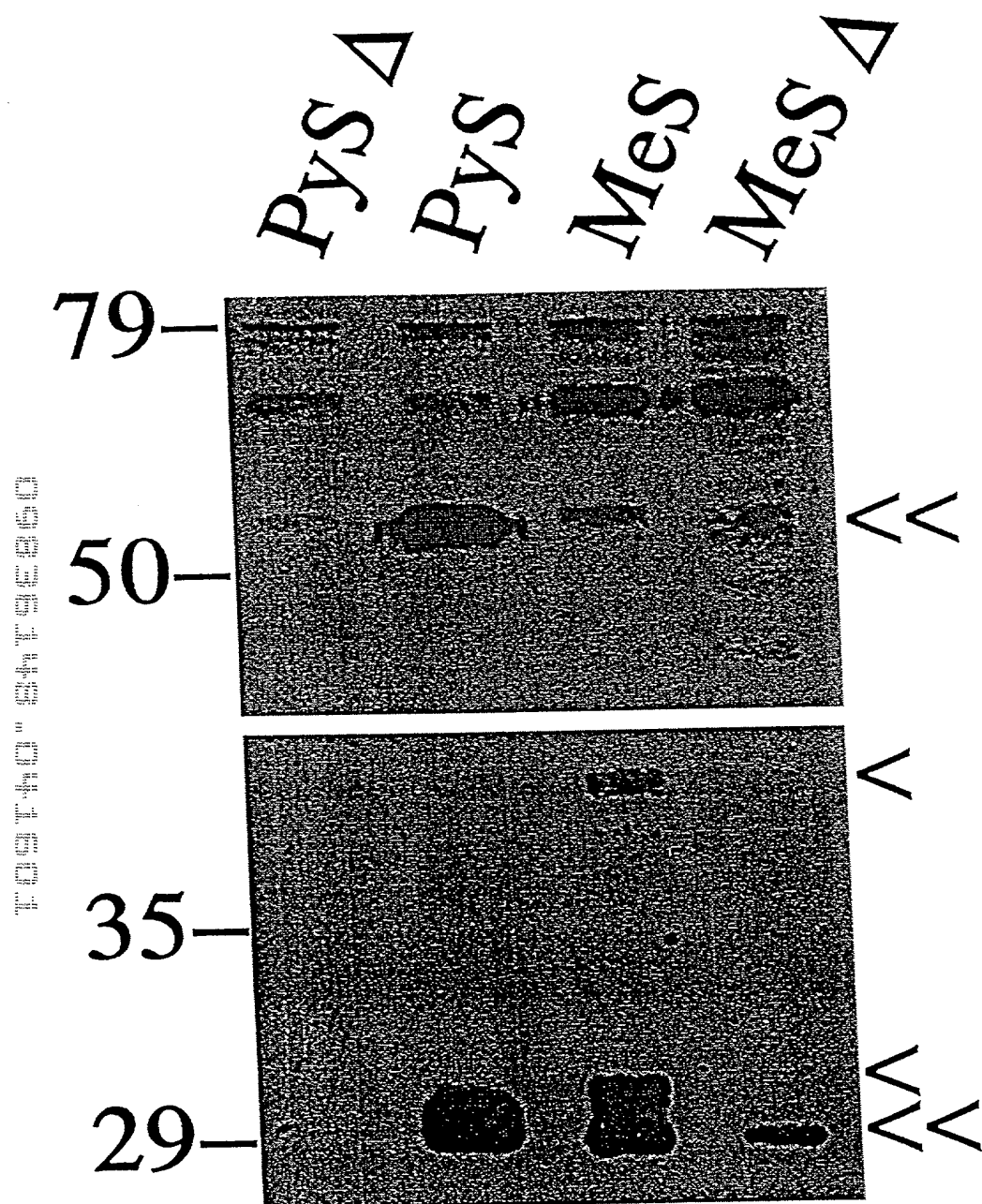


Library of Bioactive Compounds

Library of Target ID Compounds

Use corresponding activity-based probe to identify the biological target

FIGURE 2



Non-Directed Tagged Library of Sulfonates Identifies Probe for ADH Superfamily of Enzymes

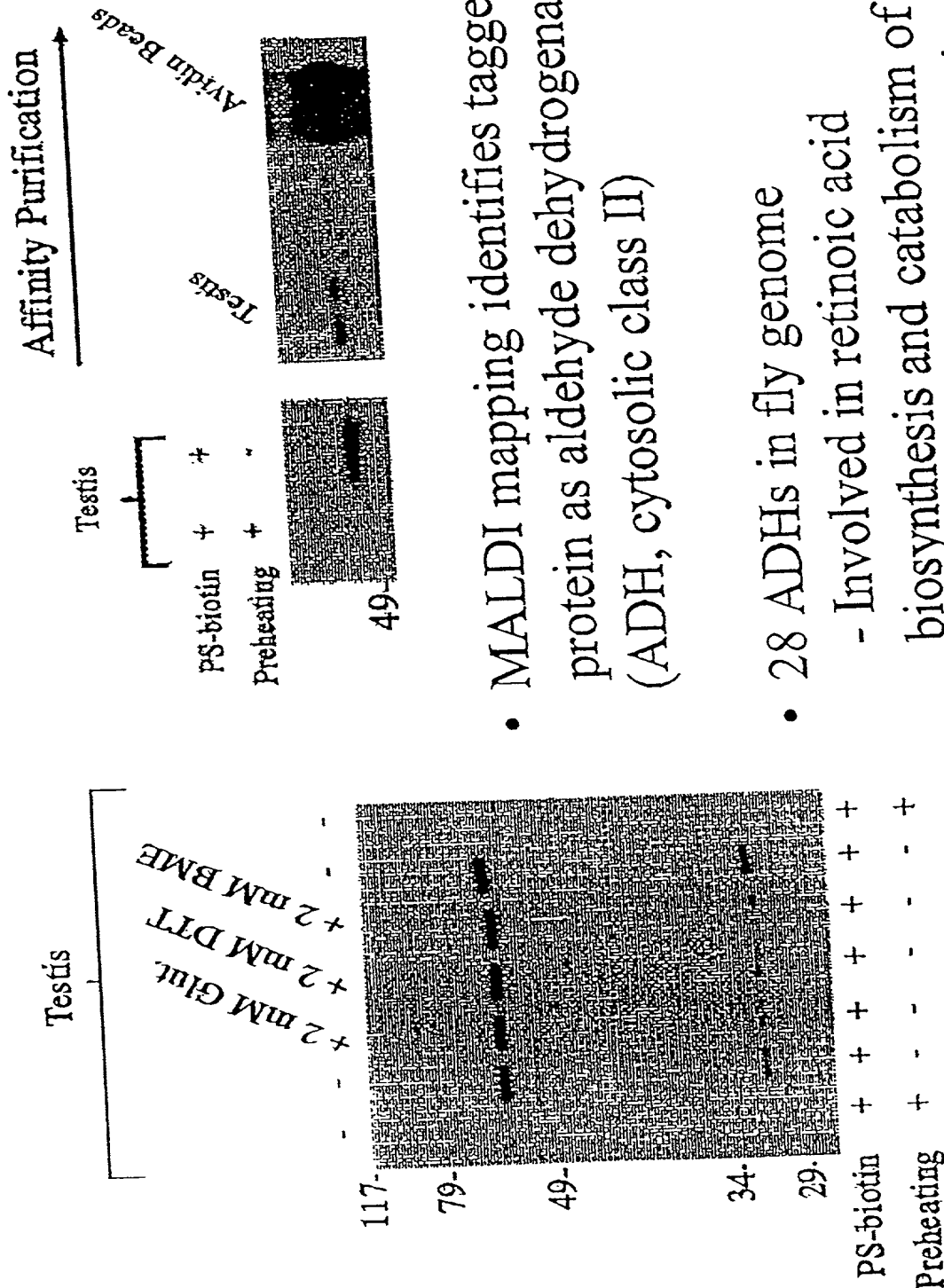
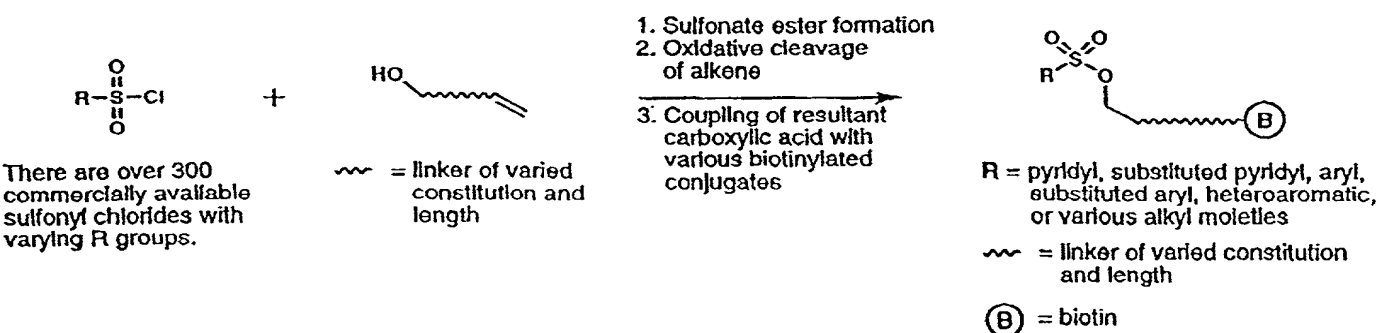


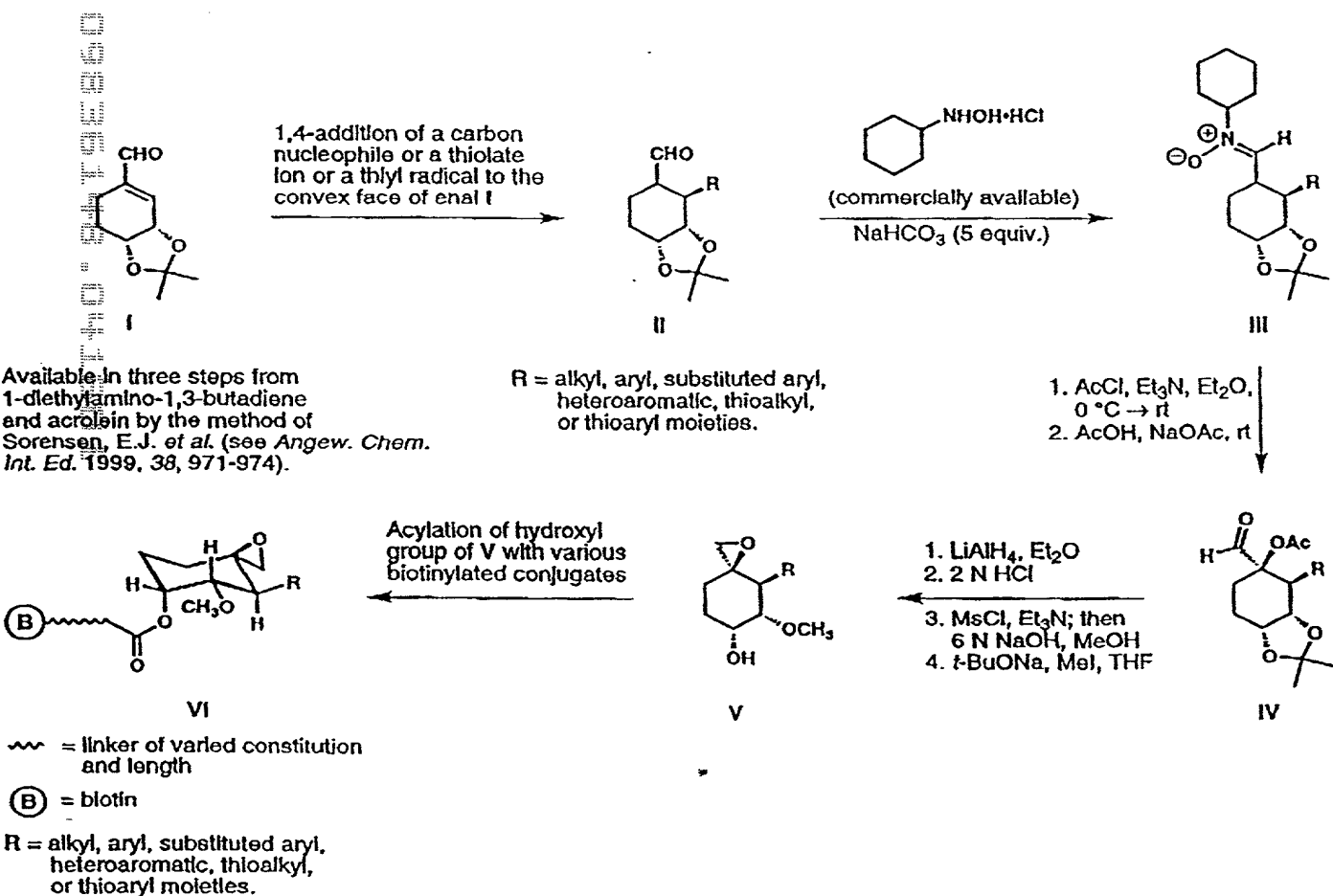
FIGURE 3

- MALDI mapping identifies tagged protein as aldehyde dehydrogenase (ADH, cytosolic class II)
- 28 ADHs in fly genome
 - Involved in retinoic acid biosynthesis and catabolism of alcohol and chemotherapeutic agents

FIGURE 4



Scheme 1. A pathway for syntheses of various biotinylated sulfonate esters for use in activity-based proteomics studies.



Scheme 2. A strategy for convergent, stereocontrolled syntheses of conformationally well-defined spiroepoxides of type VI. Literature precedent for I \rightarrow II \rightarrow III \rightarrow IV \rightarrow V can be found in Sorensen, E.J. *et al.* *Angew. Chem. Int. Ed.* 1999, 38, 971-974. Compounds of type VI are analogs of the metalloprotease (MetAp-2) inhibitor fumagillin and will be employed as covalent affinity agents in activity-based proteomics studies.

FP-Biotin: a kinetic reporter of SH Activity

- The rates at which the majority of SHs react with FP-biotin can be experimentally followed
- FP-biotin readily detects low femtomole quantities of SHs directly in complex cell/tissue proteomes

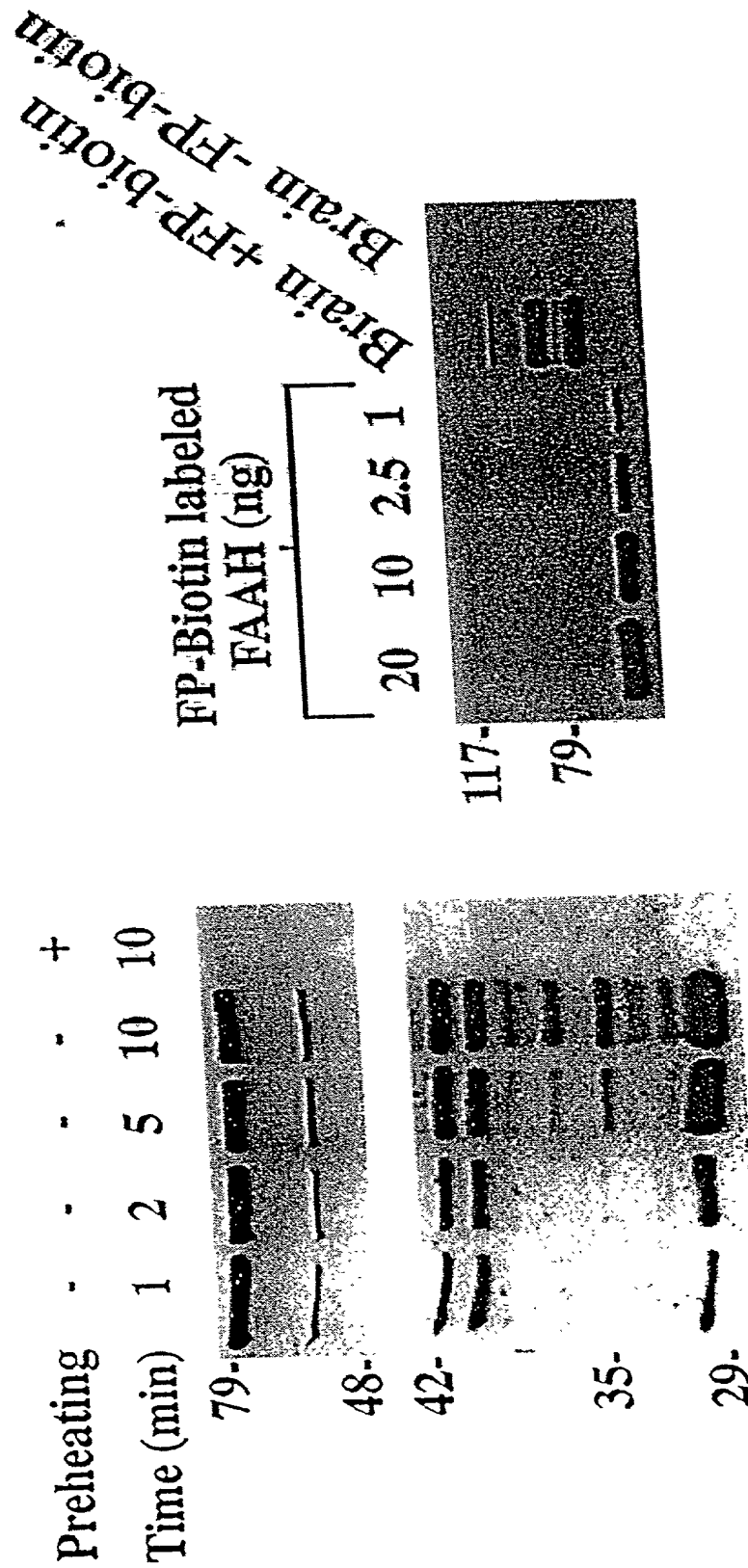


FIGURE 5

Utility of Multiplexed probes in identifying Serine Hydrolases

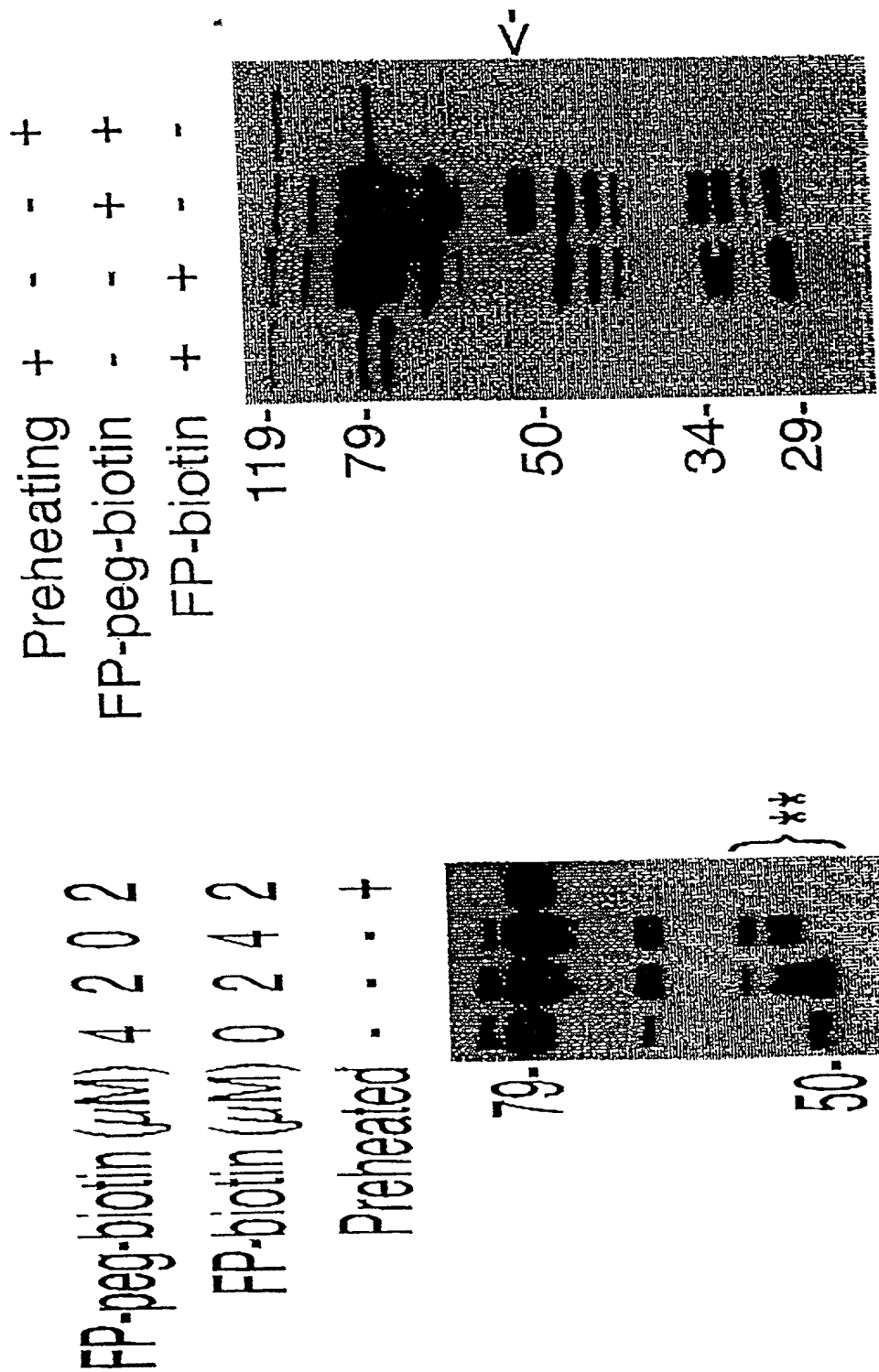


FIGURE 6

FIGURE 7

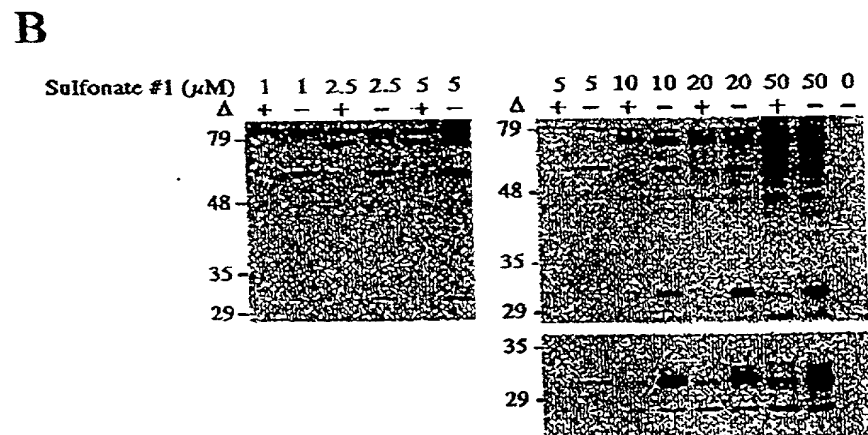
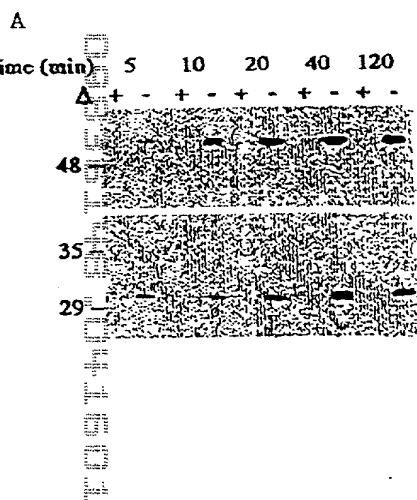
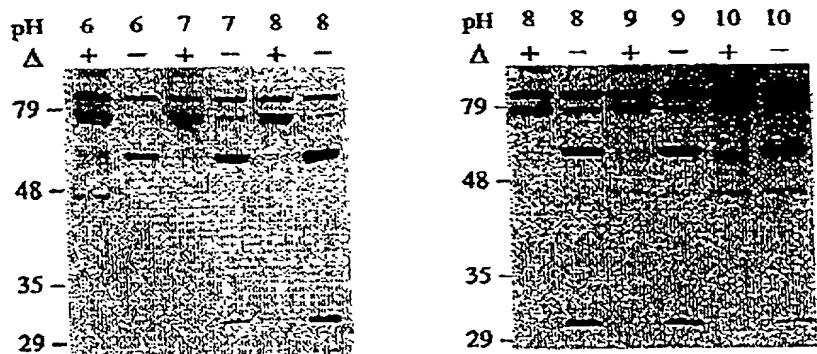


FIGURE 7

C



D

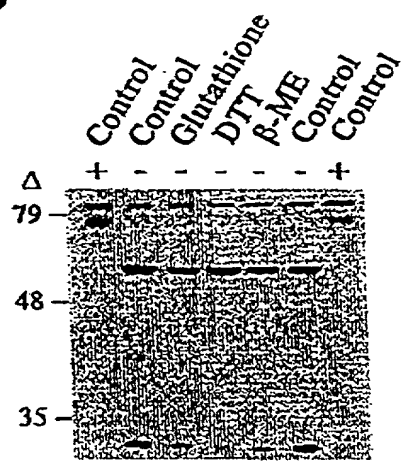


FIGURE 9

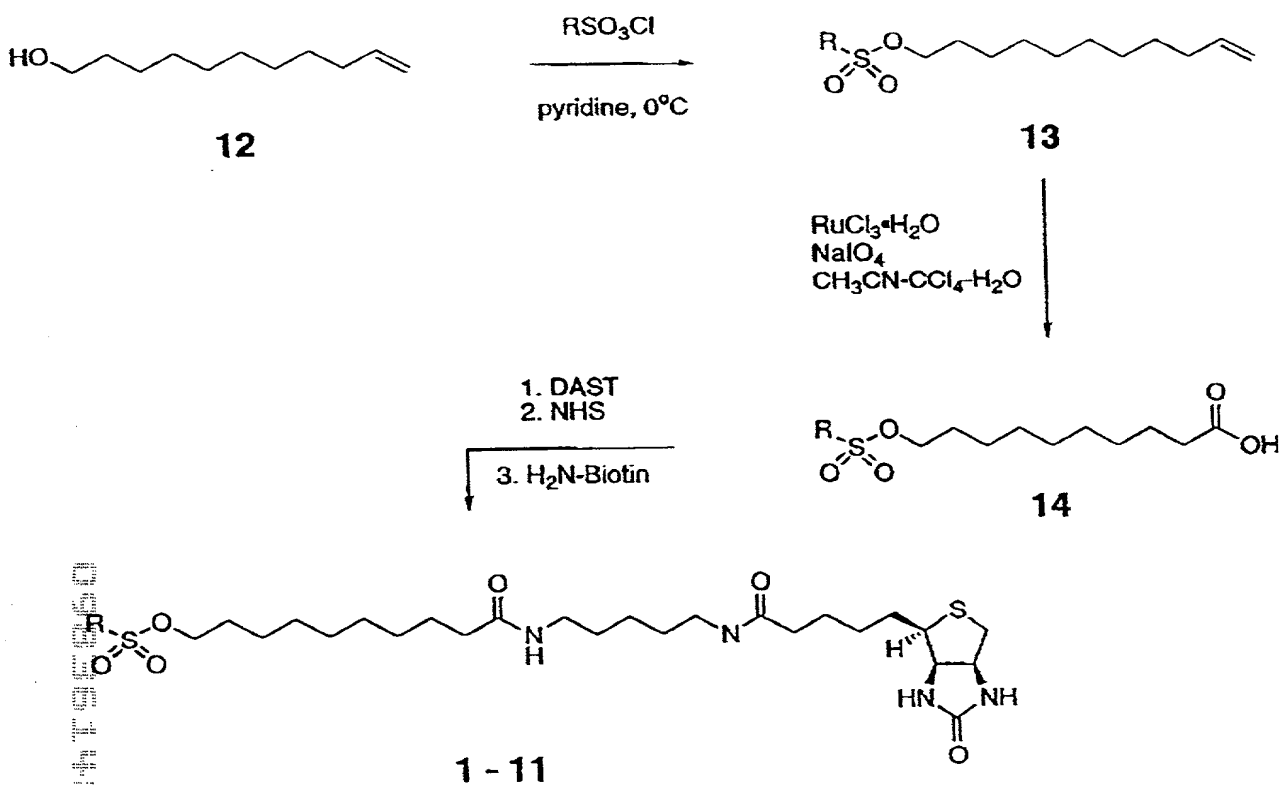
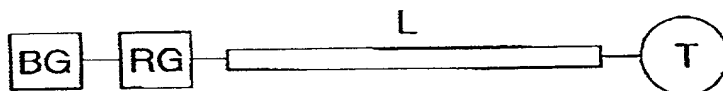


FIGURE 10

A.



B.

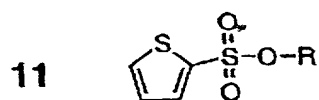
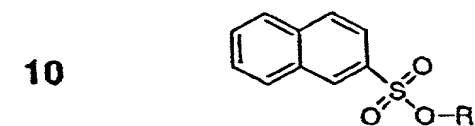
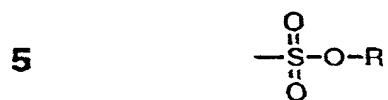
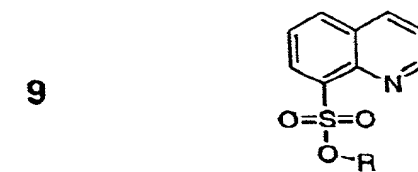
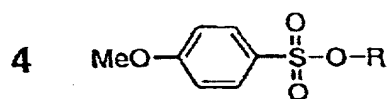
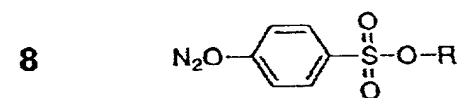
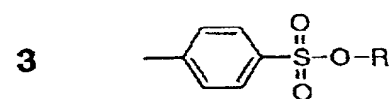
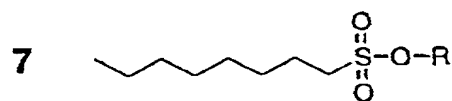
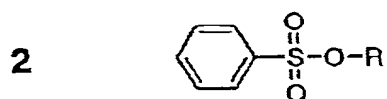
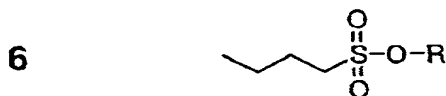
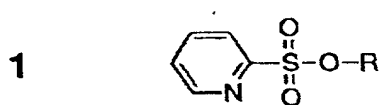
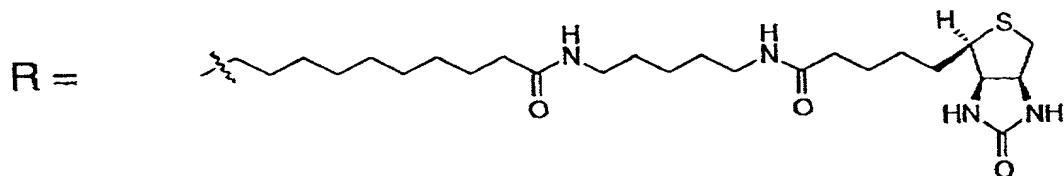
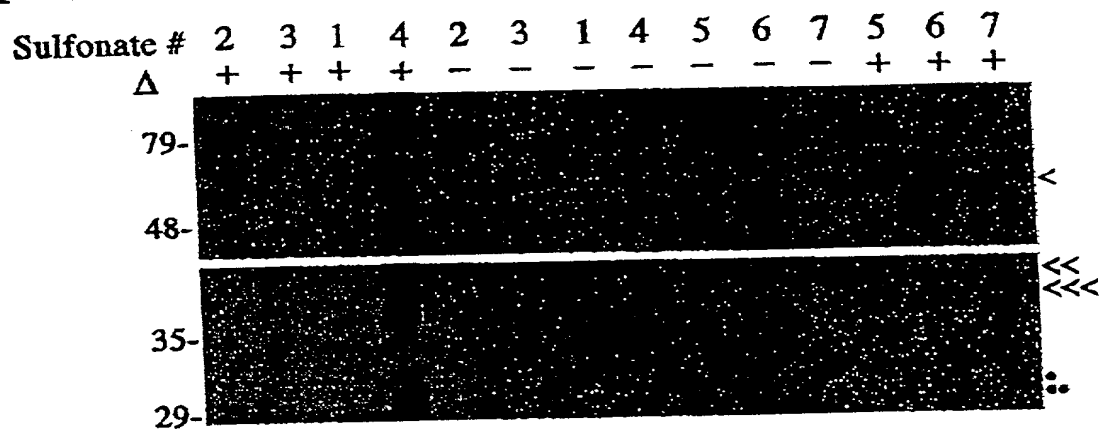
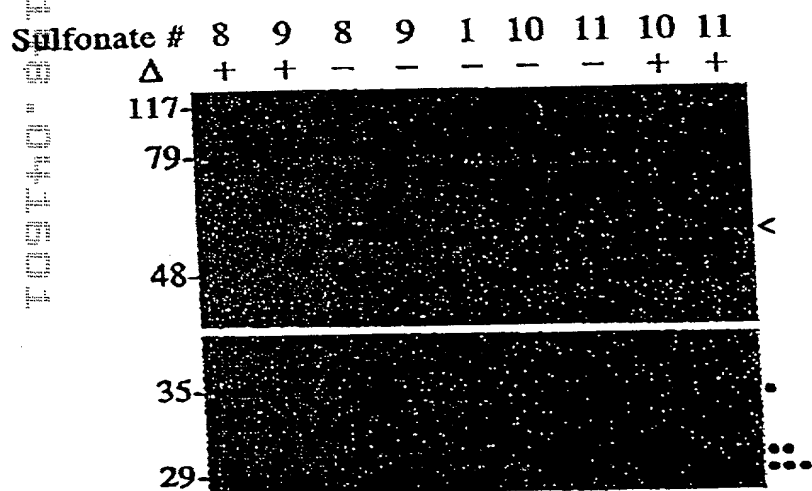


FIGURE 11

A

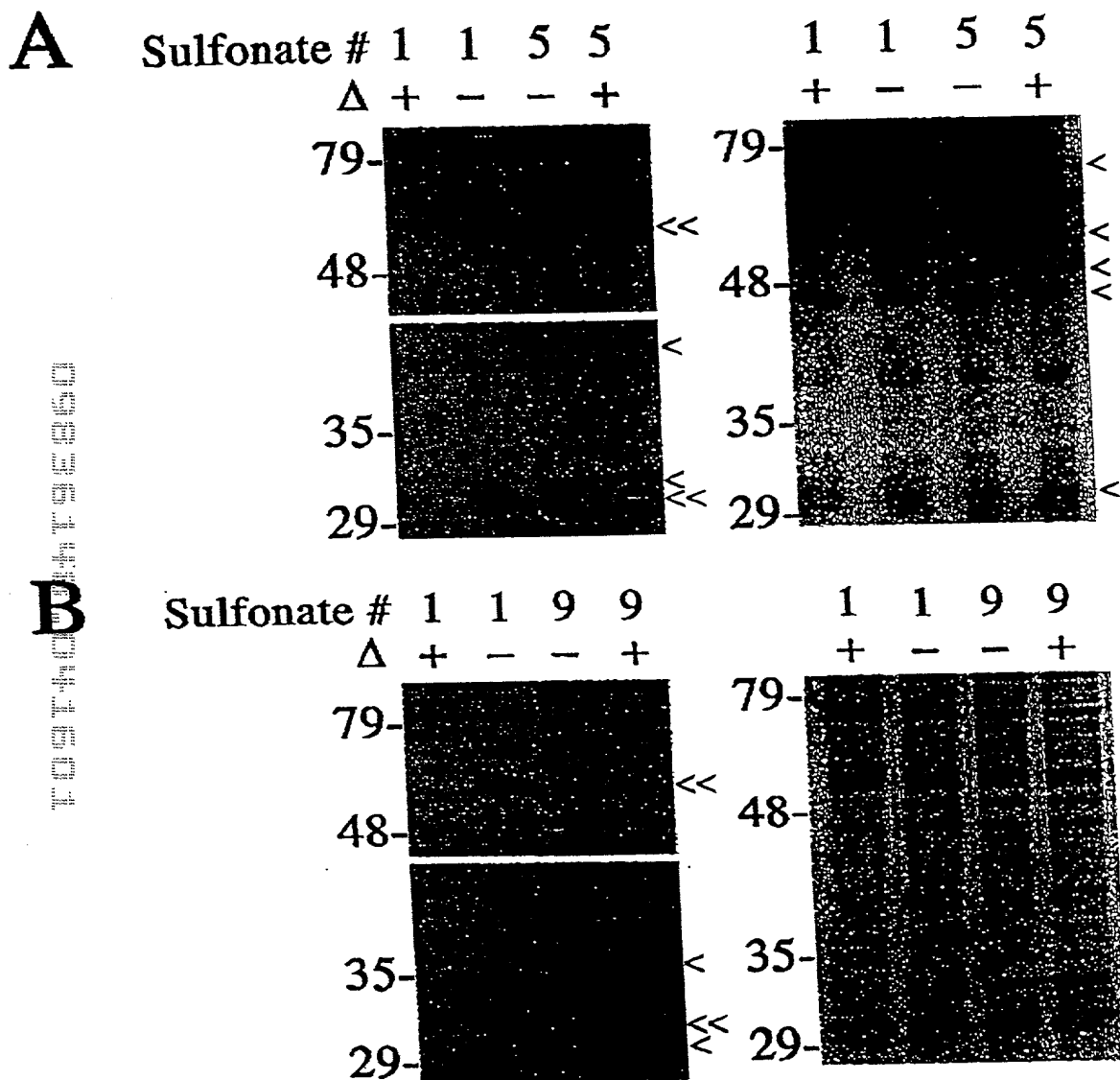


B



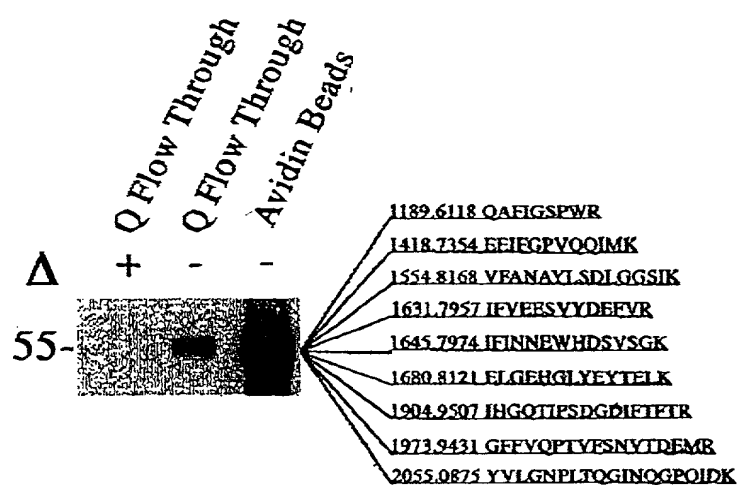
T03T40-041060

FIGURE 12

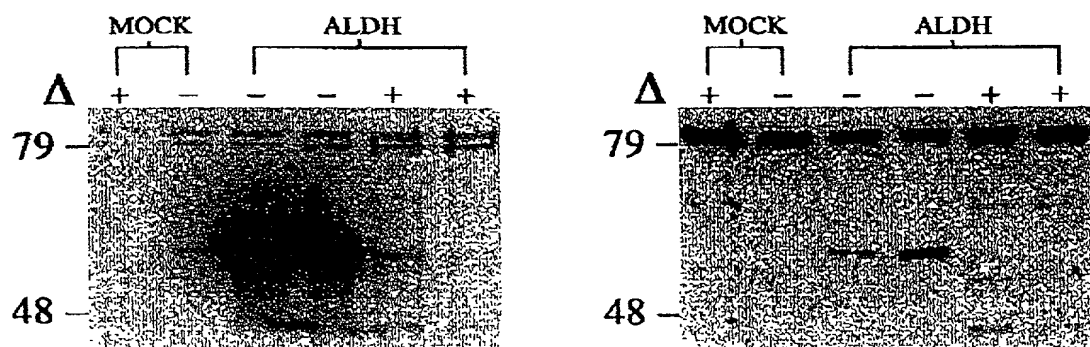


A

FIGURE 13



B



C

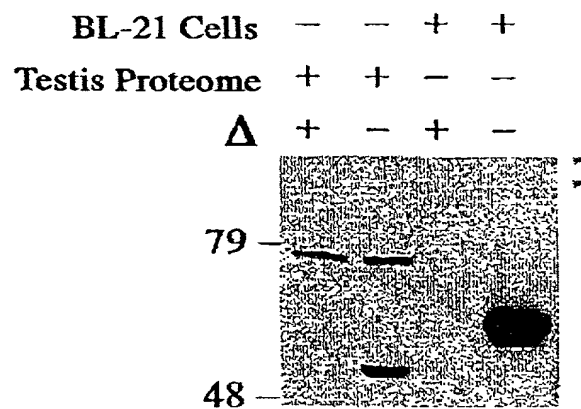
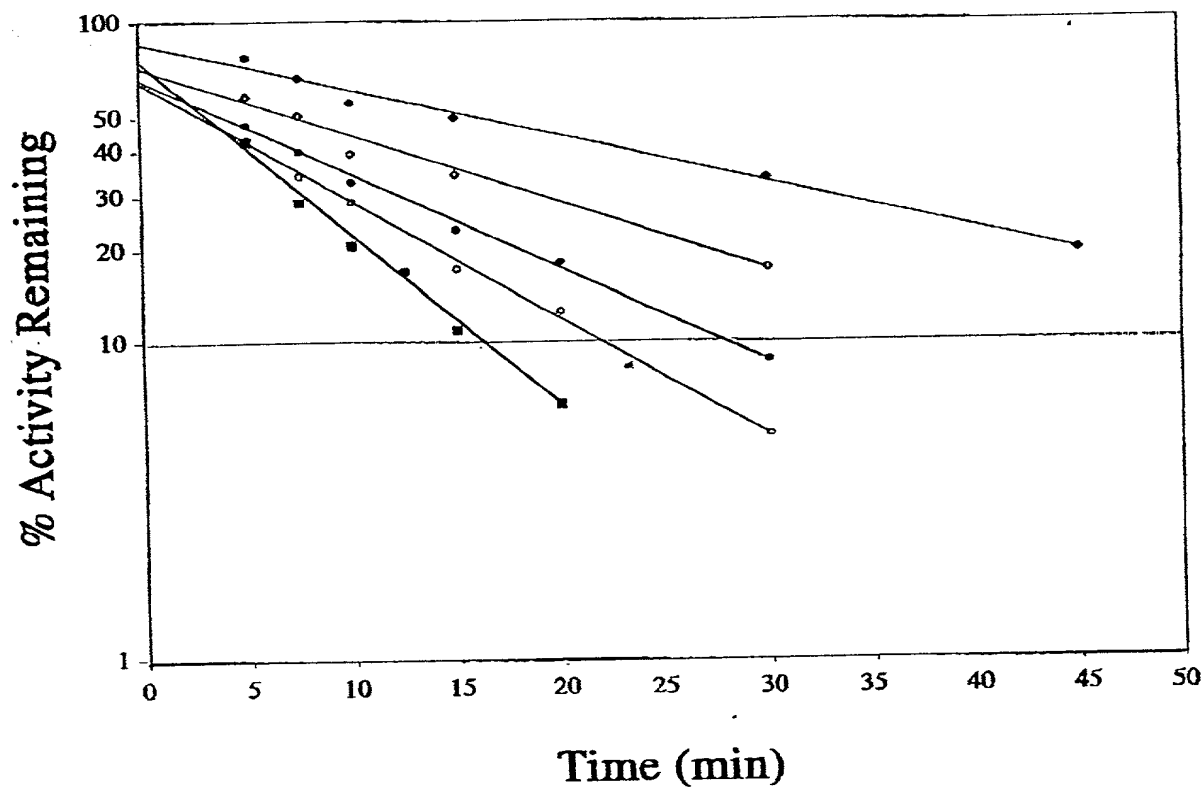


FIGURE 14

A



B

Competitor #	-	-	15	17	16	15	17	16
[Competitor (μM)]	0	0	5	5	5	50	50	50
Δ	+	-	-	-	-	-	-	-

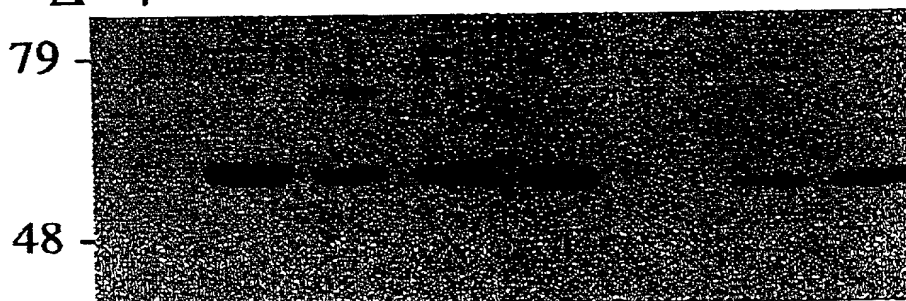
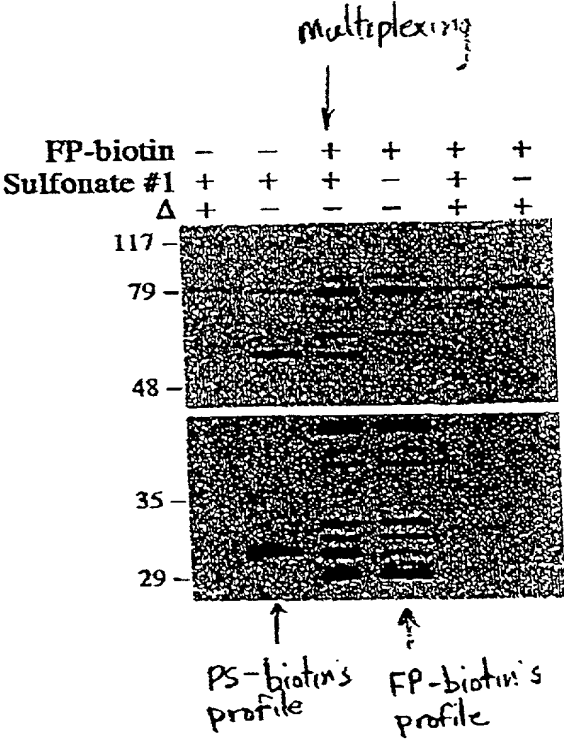
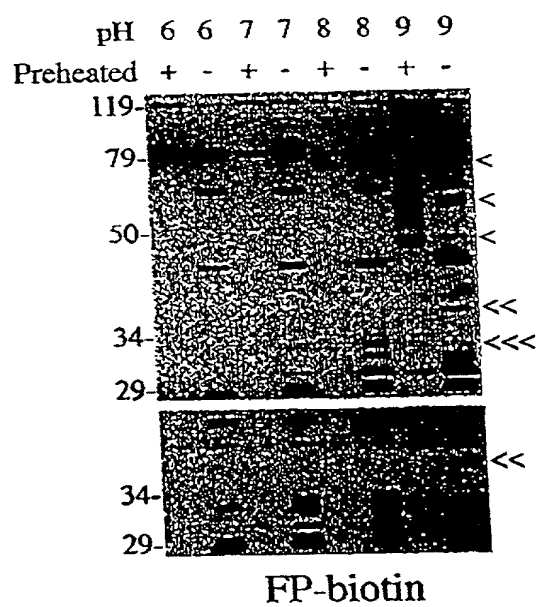
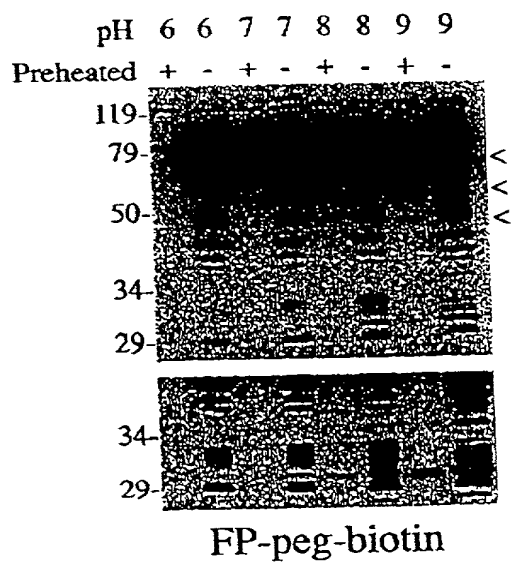


FIGURE 15



09036140 0441601

FIGURE 16



0936149-041601

FIGURE 17

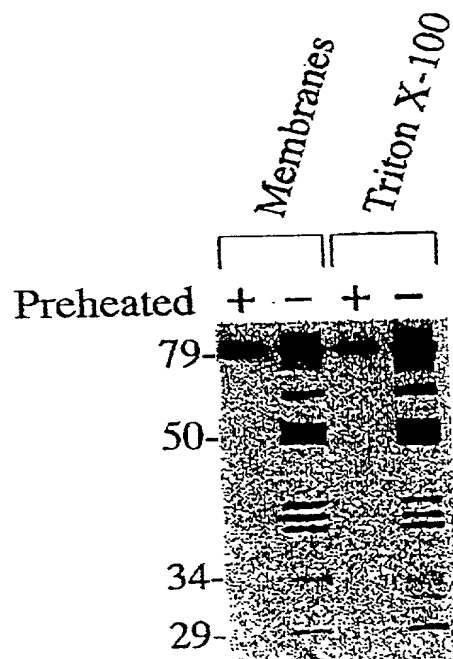
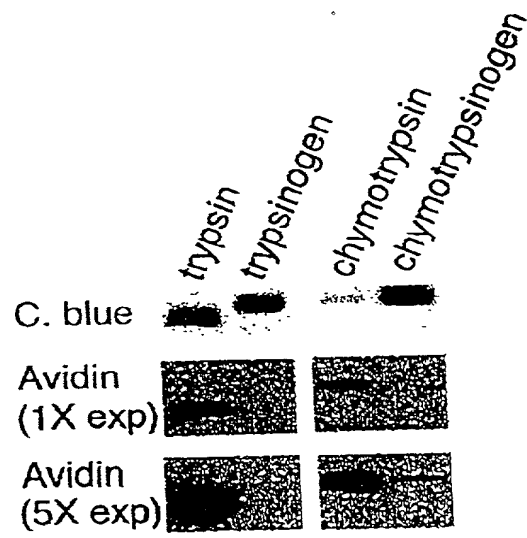


FIGURE 19

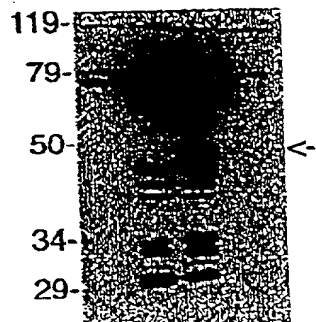


099540.041001

FIGURE 20

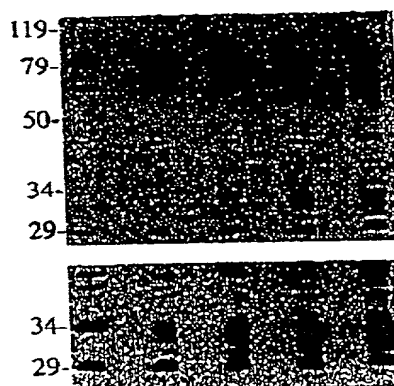
A

FP-peg-biotin	-	-	+	+
FP-biotin	+	+	-	-
Preheated	+	-	-	+



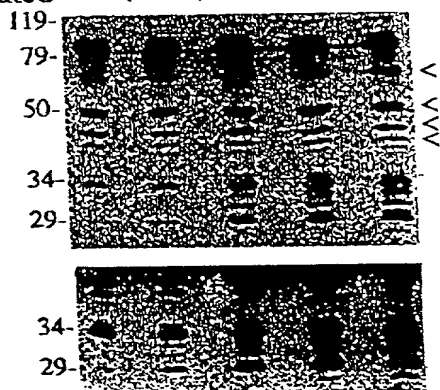
B

FP-biotin (μ M)	0.5	1	1	2	2	4	4	8	8
Preheated	-	+	-	+	-	+	-	+	-



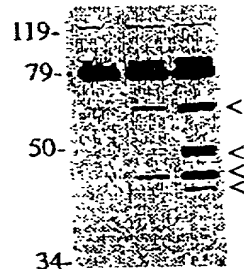
C

FP-peg-biotin (μ M)	0.5	1	1	2	2	4	4	8	8
Preheated	-	+	-	+	-	+	-	+	-



D

FP-peg-biotin (μ M)	1	2	8
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One minute
reaction

FIGURE 21

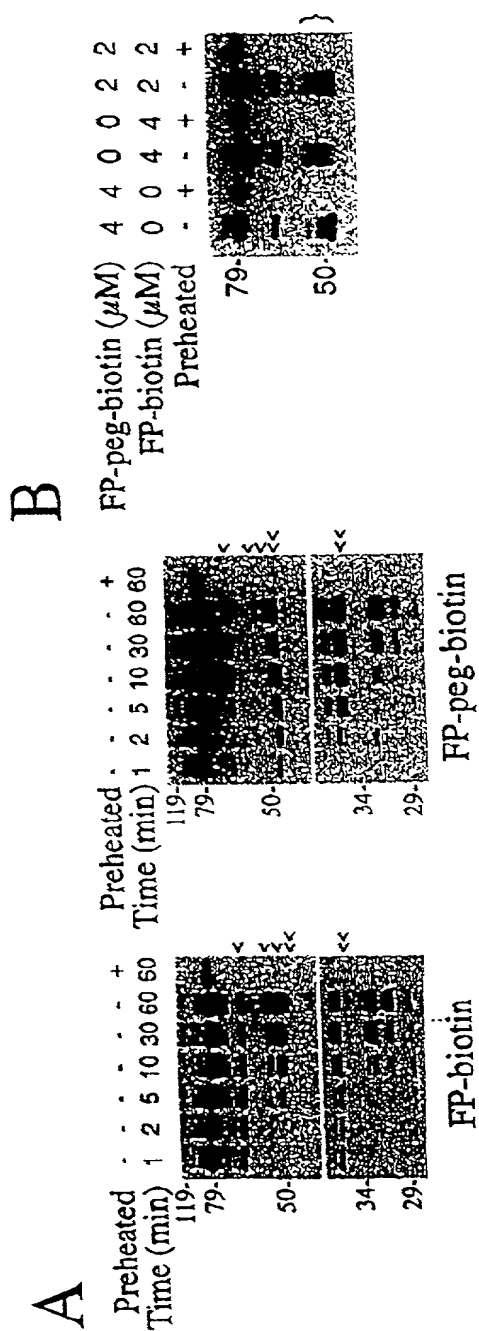
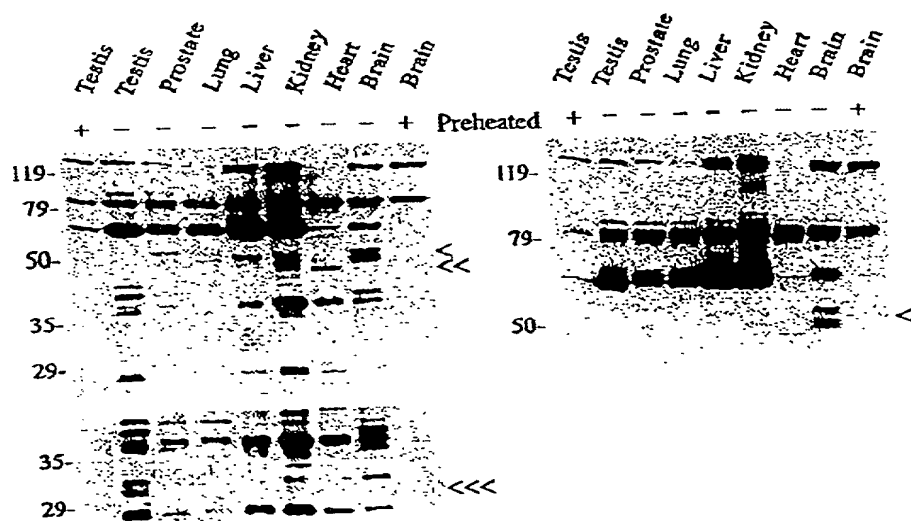


FIGURE 22



09361440 041001

FIGURE 23

